

# **Sustainable Curriculum Planning for Artificial Intelligence Education: A Self-Determination Theory Perspective**

Year: 2020 | Citations: 287 | Authors: Thomas K. F. Chiu, C. Chai

---

## **Abstract**

The teaching of artificial intelligence (AI) topics in school curricula is an important global strategic initiative in educating the next generation. As AI technologies are new to K-12 schools, there is a lack of studies that inform schools' teachers about AI curriculum design. How to prepare and engage teachers, and which approaches are suitable for planning the curriculum for sustainable development, are unclear. Therefore, this case study aimed to explore the views of teachers with and without AI teaching experience on key considerations for the preparation, implementation and continuous refinement of a formal AI curriculum for K-12 schools. It drew on the self-determination theory (SDT) and four basic curriculum planning approaches—content, product, process and praxis—as theoretical frameworks to explain the research problems and findings. We conducted semi-structured interviews with 24 teachers—twelve with and twelve without experience in teaching AI—and used thematic analysis to analyze the interview data. Our findings revealed that genuine curriculum creation should encompass all four forms of curriculum design approach that are coordinated by teachers' self-determination to be orchestrators of student learning experiences. This study also proposed a curriculum development cycle for teachers and curriculum officers.